

Introduction: Definition of Purpose



Prepared by:

WD8PU



The Holla

Amateur
Radio Club

A Course
for Technicians

an
General
Class

FCC Regulations, Part 97.1A

The 5 Purposes of Amateur Radio are...

- The Recognition and enhancement of the value of the amateur service to the public as a voluntary **noncommercial communication service**, particularly with respect to **emergency communications**.
- Continuation and extension of the amateur's proven ability to contribute to the **advancement of the radio art**.
- Encouragement and improvement of the amateur service through rules which provide for **advancing skills in both communication and technical phases** of the art.
- Expansion of the existing reservoir within the amateur radio service of **trained operators, technicians and electronics experts**.
- Continuation and extension of the amateur's unique ability to **enhance international goodwill**.





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- An Amateur Radio Operator *is a person named in an amateur operator/primary license grant in the FCC ULS database.*
- A Volunteer Examiner *is an amateur accredited by one or more VECs (Volunteer Exam Coordinator) who volunteers to administer amateur license exams. Tests require three VE's with a General Class License or higher.*
- A CSCE is a Certificate *verifying that you have passed a test element, and is good for 365 days.*
- The Federal Communication Commission (FCC) *enforces the rules for the Amateur Radio Service.*
- Transmissions that cause *"harmful interference" to other stations or electrical equipment is illegal . Legally, if your neighbor's TV is overloaded, it is their problem to fix. See also, Phone interference.*
- International Frequency Allocations *are regulated by the ITU (International Telecommunication Union), and this organization assists in the management of frequency allocations.*
- A "Control Operator" *is an FCC licensed Amateur Radio operator who controls the station either locally, remotely, or automatically (repeater). Note: operational privileges are governed by the license class in control.*



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Operators

- Amateur Radio currently offers three license categories:
 - Technician Class
 - General Class
 - Extra Class
 - You must be named in the FCC Amateur License Database, or be an alien with reciprocal operating authorization to control an Amateur station. You may operate a station any time , however, when under the authority of a licensed control operator.
 - (Note: Legacy licenses include: Novice, Technician, Technician Plus, General, Advanced, Extra)
- Call Signs
 - Must begin with letters A, K, N and W
 - Must use numbers 0-9.
 - Are Assigned Sequentially
 - Vanity Call Signs are Available from the Vanity Call Sign Program
 - Club Call...K8DAA (Kilo, 8, Delta, Alpha, Alpha) *Club calls may be applied for via the Call Sign Administrator*
 - Share Instructor Call Signs
 - Special-Event Call Signs (1-by-1 Calls, N8V) may be applied for by any FCC-licensed Amateur.

Ham Radio Introduction: License Class & Privileges Lesson 1



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Technician Class

- Operational Privileges Above 50 MHz Only.
- All Mode Privileges Above 50 MHz.
- DX Possible Only Occasionally.
- May Use Popular Repeater Systems.

General Class

- Operational Privileges On All Bands!
- All Mode Privileges!
- DX Possible In HF Band Spectrum At All Times!
- May Become A VE For Technician Testing.
- The Most Popular License Class.
- This Course Encourages General Class!

Practical Operation



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- ID using your call sign at the end of every transmission, and every 10 minutes.
- ID on a repeater using any or all formats:
 - Voice/Phone in English
 - Video Image
 - Morse Code not to exceed 20 words per minute.
- Special Event Stations must ID once every hour.
- ID sending the other station's call first, then your call sign. Example: "K8DAA, this is WD8PUO"
- When you have passed your test, but have not yet received your license, you may use the indicator /AT after your call to indicate "authorized Tech".

Practical Operations



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- “CQ” is the code broadcast when you wish to communicate with another Amateur. CQ means, “Calling Any Station”.
- Always listen to determine of the frequency is in use before calling “CQ”.
- Respond to a CQ by first transmitting the sender’s call sign followed by your own.
- All unidentified transmissions are illegal, even test transmissions.
- An Amateur must use the minimum power requirements to carry on communication with a maximum permissible wattage of 1,500 watts.



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When working HF single sideband, proper voice procedure is very important. Whether you're working a DX operator (a ham in another country) who may not fully understand your language, or speaking to your friend down the street, speak slowly and clearly. That way, you'll have fewer requests to repeat information.

When using SSB, use plain language and keep jargon to a minimum. If the other operator is having difficulty copying your signals you should use the standard International Telecommunication Union (ITU) *phonetic alphabet*. See **Table 5.1**. Use the words in the phonetic alphabet to spell out the letters in your call sign, your name or any other piece of information that might be confused if the letters are not received correctly. Hams in all countries around the world generally understand this phonetic alphabet.

Table 5.1

Standard ITU Phonetics

<i>Letter</i>	<i>Word</i>	<i>Pronunciation</i>
A	Alfa	AL FAH
B	Bravo	BRAH VOH
C	Charlie	CHAR LEE
D	Delta	DELL TAH
E	Echo	ECK OH
F	Foxtrot	FOKS TROT
G	Golf	GOLF
H	Hotel	HOH TELL
I	India	IN DEE AH
J	Juliett	JEW LEE ETT
K	Kilo	KEY LOH
L	Lima	LEE MAH
M	Mike	MIKE
N	November	NO VEM BER
O	Oscar	OSS CAH
P	Papa	PAH PAH
Q	Quebec	KEH BECK
R	Romeo	ROW ME OH
S	Sierra	SEE AIR RAH
T	Tango	TANG GO
U	Uniform	YOU NEE FORM
V	Victor	VIK TAH
W	Whiskey	WISS KEY
X	X-Ray	ECKS RAY
Y	Yankee	YANG KEY
Z	Zulu	ZOO LOO

Note: The **boldfaced** syllables are emphasized. The pronunciations shown in this table were designed for those who speak any of the international languages. The pronunciations given for "Oscar" and "Victor" may seem awkward to English-speaking people in the US.

Ham Radio Radio Interface



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Functions



Define:

Mode-

Split-

ALC-

Noise Blanker-

Memory-

RIT/XIT-

Band-

VOX-

Squelch-

RF/Tune-

Filter-

AGC-

Step-

PTT-

AF/RF Gain-

F-Key/Menu-

Dummy Load-



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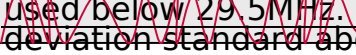
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Emission Mode		Specifications Required
 <p>CW (Data)</p>	<p>CW stands for "Continuous Wave". A continuous sine wave carrier is switched on and off. This is the simplest format. CW uses only 500HZ bandwidth.</p>  <p>Carrier</p>	Demonstrate Using CW Reader
 <p>AM Phone</p>	<p>AM - "Amplitude Modulation". The voice varies the height of the sine wave peaks. Also called Double Side-band. Utilizes a carrier. AM is a wide signal requiring 5KHz of bandwidth.</p> 	Demonstrate On 40 Meters
 <p>SSB Phone</p>	<p>SSB stands for "Single Side Band". SSB suppresses either the upper (LSB) or lower (USB) sideband and the carrier. An artificial carrier is introduced at the receiver (beat frequency oscillator). Operating the voice ear 4KHz bandwidth.</p> 	Demonstrate With QSO
 <p>FM Phone</p>	<p>FM stands for "Frequency Modulation". FM varies the distance between the sine wave carrier peaks, while the height of the peaks remains constant. FM is very wide bandwidth and cannot be used below 29.5MHz. 5KHz deviation standard above 29 MHz.</p> 	Demonstrate With QSO